REMARKS

Applicant respectfully requests reconsideration of the rejection of claims 1-15, 17 and 20-22, as amended without the addition of new matter. Claims 16, 18 and 19 are objected to as depending from rejected claims, and claims 23-47 are presently withdrawn from consideration.

In paragraph 2 on p. 3 of the Office action the drawings are objected to because there is no clarification of which drawings depict prior art. Parenthetical reference is made to Fig. 15, but as pointed out at paragraph [039] this is a "schematic drawing" of the illumination system. See also paragraphs [053] to [055] which affirm that this figure does not depict prior art.

Applicant has reviewed the application for drawing disclosures of what might be called prior art but has not found anything representing a combination previously disclosed by others. The images of Fig. 17 and the response curves of Fig. 18, referenced at paragraphs [041] and [042] respectively, do show general characteristics of interest. They are more specifically described at paragraph [077]. Since they illustrate image and operating precision of a known astigmatic gage they can be construed to be in the prior art.

Accordingly revised "Replacement Sheets" for Figs. 17 and 18 are being submitted herewith, and separately to the Office Draftsman, each bearing the added legend "PRIOR ART". Approval of the changes is respectfully requested.

The Office action noted that the art listed in the specification as filed was not timely presented in an Information Disclosure Statement. Applicant respectfully submits that because the referenced art was timely disclosed in the application as filed, the art was

properly and timely made of record. The publications included the primary reference, Dunn et al 6,018,383, so that there is clear evidence that a full and candid disclosure of known prior art was made on filing. Accordingly the appended Information Disclosure Statement should be found to be in compliance with the Rules. Please note that the other art cited (than Dunn et al) in the Information Disclosure Statement is less relevant but should be on the record. Applicant was not aware of the technicality as to the required time of filing of the Information Disclosure Statement.

The rejection of claims 1-10, 13, 15, 17, 20 and 21 under 35USC§102(b) is respectfully traversed. It is submitted that the present invention, as clearly elucidated in the claims, constitutes a novel and particularly advantageous approach to the transfer of images from a master medium to a printing format.

Applicant has searched intensively but has found no other known system which moves an optical assembly in a major dimension in providing transfer of the image. Applicant's system is not only fundamentally operably different but enables achievement of a significant number of desirable operative objectives. Applicant's system differs in geometry, as can be seen in Fig. 1, in the disposition of a series of movable reflectors along the optical transfer path. It also differs operationally, in the cooperation between the optical transfer path and the stationary photomask and format plane by projecting the changing segments of an image through the moving optical system between stationary elements while writing successive component lines, moving the elements incrementally in a direction orthogonal to the principal scanning direction to provide a complete raster.

In contrast, Dunn et al teach a system in which optical transfer is through stationary optical elements, while the mask and format are moved in synchronism.

Reference should be made to Figs. 1, 2 and 5 of Dunn et al, the '383 patent, and to the specification thereof, particularly at column 3, lines 59-62 and column 5, lines 56-64. In Dunn et al, the "projection lens 26" and the "reversing unit 27" can be seen as comprising stationary components of an optical imaging path, augmented by a third component in the form of a fold mirror 25. As is pointed out in the above-referenced paragraphs of Dunn et al, a 1:1 projection system is used which is stationary and above the mask and substrate, and the mask and substrate are moved in synchronism (emphasis supplied). This approach to image transfer is totally different from applicant's system, and lacks the capability of providing a number of beneficial attributes, as noted below relative to applicant's system. Dunn et al do not show or suggest in any way the transfer of an image between stationary source and format. Consequently it is submitted that as shown below relative to the individual claims, the concept set forth in the present application is both novel and patentable.

In Dunn et al, the image and the format are disposed on rollers, and moved synchronously, so that image transfer from a point at the pickup image is effected to a point on the recording image, and the optical transfer system is simplistic and remains stationary. The lines of the raster are completed by movement of the entire mechanism relative to the stationary image transfer system. In applicant's system, however, the image and format are flat and the image transfer system moves linearly along a major scan line, relative movement being supplied by shifting the image and the format incrementally in the orthogonal direction.

The Office action interprets the "reversing unit 27" of Dunn et al as the equivalent of a drive motor or in substance coupled into the drive system, but this is incorrect. The

reversing unit is an optical element in the optical imaging path in Dunn et al, and as such is stationary along with the remainder of the imaging system. Specifically, the reversing unit, which is described at column 11, lines 1-2 of Dunn et al, as a "split-roof mirror system". The image and not the drive, in other words, is reversed by this mirror system, and the Dunn et al optics simply remain stationary.

Consequently, in structure, operative relationships and function the present invention utilizes entirely different and patentably unique modes. This combination furthermore enables a degree of adjustable magnification of the image, employment of a large reflective achromatic optical system, scanning of a large format and removing the two-dimensional effects of distortion. Further the system avoids the introduction of yaw angle error and feeds the web through without twisting or stress. Since the optics are completely achromatic the system is insensitive to the wavelength composition of the light which is supplied by the illuminator. These and other beneficial factors are pointed out in Para. [0015] of the present specification and could not be achieved with the Dunn et al approach without the exercise of invention.

With these considerations in mind, applicant has amended certain of the claims for clarity to emphasize the distinctions over the art cited. Claim 1, for example, now delineates the optical transfer assembly as being disposed between the master object plane and the format plane, with the third assembly being coupled to move the second (optical transfer) assembly reciprocally and "linearly along a first direction between the master object and format planes", which unambiguously distinguishes over the cited Dunn et al patent.

Claim 2, which is dependent from claim 1, distinguishes for the same reasons, but also in setting forth a combination in which the image "of a master object" can be "superimposed in registry upon another pre-existing image...in the format plane...". This further distinguishes from Dunn et al and is patentable thereover. Dunn et al neither show nor suggest anything about superimposing an image on a pre-existing image.

Claims 3 and 4 distinguish over the reference cited as does parent claim 1, but also gain context from the recited elements. Claim 4 specifies a "flexible material in the format plane", and serves as the basis for dependent claims 5-8, which further elucidate details of the combination.

Note that claim 7 relates to the feature also enumerated in claim 2, specifying that the "flexible material bears a pre-existing image".

Claim 8 has been amended for better form, and recites, dependent upon claim 4, a machine in which the web is fed through the machine by a "feed roller supplying the flexible material via one or more guide rollers into a take-up roller". Again, patentable distinctions are inherent in the previously discussed parent claims. Claim 9, dependent from claim 8, and slightly amended claim 10, also dependent from claim 8, recite details of the guide rollers which are significant to the maintenance of registration and precision in the image.

Claim 11 dependent from claim 4, sets forth a vacuum platen coupled to the fourth assembly and "backing up the flexible material", a useful factor in achieving the precision that is needed with the planar configuration used. In conjunction with this,

dependent claim 12, which follows from parent claim 11, specifies the usage of the vacuum during the completion of a raster scan pattern.

Claim 13 has been cancelled without prejudice and it is subject matter incorporated in parent claim 1. Claim 14, now dependent from claim 1, specifies the incorporation of means in the second assembly to "change the magnification of the transferred image in a controlled manner". The Office action asserts that this capability is taught by Dunn et al, but after diligent review no support for this statement has been found and is respectfully requested that a citation be given for this assertion. In any event, claim 14 distinguishes on the same basis as parent claim 1.

Independent claim 15 was also rejected on the same basis as the prior claims, but the same response given as to claim 1, above is incorporated by reference herein. Also in Claim 15, the second assembly is set forth as including an optical transfer subsystem, and the third assembly is specified as including a "drive mechanism which moves the second assembly reciprocally in a first linear direction to provide a first dimension of a raster scan pattern...". The claim further specifies other features, including a fifth assembly "comprising a source of actinic radiation, light mixing means and drive means, part of which moves, coupled with the second assembly, to provide actinic radiation to the part of the image of the master object being transferred". Claim 15 further includes a "base structure supporting the five assemblies and providing flat and orthogonal reference surfaces for the movements of the first and second assemblies." These further elements and relationships further distinguish over Dunn et al.

Claims 16, 18 and 19 were objected to as dependent from rejected claims, but are not revised or rewritten in independent form, being simply resubmitted herewith.

Claim 17 dependent from claim 15, specifies that the base structure used in providing a reference surface is of either stone or metal, which is of significance to the novel optical transfer system and is consequently submitted herewith since Dunn et al has no such feature.

Claim 20 is dependent from claim 15 and incorporates as a further aspect of the fifth assembly a source of actinic radiation, an integrator rod and a transfer lens in series. Such series combination is now shown or suggested in Dunn et al. Further, claim 21, which is dependent from claim 20, specifies one of a number of sources for the actinic radiation and is consequently allowable therewith. Claim 22, also dependent from claim 21 further includes a "fiber cable...a random arrangement of individual fibers whose exit end is shaped to arctuate field of the optical transfer assembly..." No such features are shown or suggested in Dunn et al.

Applicant respectfully requests reconsideration of the rejection of claims 1-12, 14, 15, 17 and 20-22. Claim 13 has been cancelled, claims 16, 18 and 19 were only objected to and claims 23-47 are currently withdrawn from consideration.

Respectfully submitted,

T. R. Whitney